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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/812,288

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Yong-Woon Moon

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EXAMINER

SAMS, MATTHEW C

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/812,288	<b>Applicant(s)</b> MOON ET AL.	
	<b>Examiner</b> MATTHEW C. SAMS	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This office action is in response to the Applicant's arguments filed on 12/20/2007.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1-23 have been considered and are persuasive, however a new ground(s) of rejection is set forth in view of Legg et al. (US-6,414,947).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (US-6,975,608 hereinafter, Park) in view of Legg et al. (US-6,414,947 hereinafter, Legg) and Reynolds et al. (US-6,859,654 hereinafter, Reynolds).

Regarding claim 1, Park teaches a mobile communication system for performing handover between heterogeneous mobile communication networks, comprising:

a dual-mode terminal (Fig. 1C [300]) having a first module for measuring the strength of a signal received in a first network (Fig. 9 [S204] & Col. 8 line 64 through Col. 9 line 11), and a second module for measuring information of a signal transmitted from a second network (Fig. 9 [S208] & Col. 9 line 12-23) if it is determined that the terminal has moved from the first network to the second network, the terminal generating a first message including the measured signal information; (Fig. 9 [S203])

a first network device located in the first network, for communicating with the first module, receiving the first message from the terminal, and transmitting a handoff request message to the second network device; (Fig. 5, Fig. 6A, 6B [Handoff Required] & Col. 6 lines 36-54) and

a second network device located in the second network, for communicating with the second module, receiving the handoff request message from the first network device to assign a channel and transmitting channel assignment information to the first network device, (Fig. 5 [S101], Fig. 6A, 6B [Handoff Required Ack & Extended/General Handoff Direction Message] & Col. 6 lines 36-54)

wherein the first network device generates a second message including the channel assignment information and transmits the second message to the dual-mode

terminal communicates with the second network using the assigned channel. (Fig. 6A, 6B [Extended/General Handoff Direction Message])

Park differs from the claimed invention by not explicitly reciting the handoff request message includes measured signal information.

In an analogous art, Legg teaches a mobile device assisted handoff that includes a mobile device (Fig. 4 [401]) that transmits a measured signal message (Col. 2 lines 46-49 and Col. 6 lines 49-51 *i.e.* the mobile station transmits to a base station the pilot signals strengths) to a first network device (Fig. 4 [403]), which is then transmitted to a second network device. (Fig. 4 [405] and Col. 6 lines 24-33) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the communication system of Park after modifying it to incorporate the transmission of measured signal messages between network devices to facilitate handoffs of Legg. One of ordinary skill in the art would have been motivated to do this since it enables the second network device to prepare for a handoff.

Park in view of Legg differs from the claimed invention by not explicitly reciting the messages are formatted as Short Message Service (SMS) messages.

In an analogous art, Reynolds teaches a method and system for transmitting measurement reports in a mobile communications system that includes sending the measurement reports and handoff decisions encapsulated in a SMS message format. (Col. 3 line 62 through Col. 4 line 7, Col. 4 line 35 through Col. 5 line 33) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the handoffs of Park in view of Legg after modifying it to incorporate the SMS

messaging reports of Reynolds. One of ordinary skill in the art would have been motivated to do this since using the SMS messaging format would not require redefining conventional RRC messages (Park Col. 6 lines 9-17) and allows the use of existing radio interface equipment to be used to relay handoff information between networks. (Reynolds Col. 5 lines 3-33)

Regarding claim 2, Park in view of Legg and Reynolds teaches the first module is an asynchronous module for performing communication with asynchronous communication technology and the second module is a synchronous module for performing communication with synchronous communication technology. (Park Fig. 1C [310 & 320] & Col. 2 lines 58-67)

Regarding claim 3, Park in view of Legg and Reynolds teaches the first module is a WCDMA module (Park Col. 1 line 46 through Col. 2 line 5) for UMTS communication, the second module is a CDMA 1x module for CDMA 1x communication (Park Col. 1 lines 46-52), the first mobile communication network is a UMTS network, the second mobile communication network is a CDMA 1x network, the first mobile communication network device is a UMTS network device, and the second mobile communication network device is a CDMA 1x network device. (Park Fig. 1C, Col. 2 line 58-67, Fig. 6A and Fig. 6B)

Regarding claim 4, Park in view of Legg and Reynolds teaches the WCDMA module communicates using a channel assigned by the UMTS network (Park Fig. 9 [S202]), measures the strength of a signal received from the UMTS network (Park Fig. 6A [Measurement Report] & Fig. 9 [S203 & S204]), and has an SMS module for

converting corresponding information into an SMS message (Reynolds Col. 3 line 62 through Col. 4 line 7, Col. 4 line 35 through Col. 5 line 33), wherein the CDMA 1x module communicates using a channel assigned by the CDMA 1x network and measures the strength of a signal received from the CDMA 1x network. (Park Col. 8 lines 17-21 & Fig. 9 [S208])

Regarding claim 5, Park in view of Legg and Reynolds teaches the dual-mode terminal further comprises a mode selector for controlling the WCDMA module and the CDMA 1x module, and comparing the signal strength measured by the WCDMA module with a preset threshold to determine whether the dual-mode terminal has moved from the UMTS network to the CDMA 1x network. (Park Fig. 5 [S102] & Col. 5 line 60 through Col. 6 line 54)

Regarding claim 6, Park in view of Legg and Reynolds teaches if it is determined that the dual-mode terminal has moved from the UMTS network to the CDMA 1x network, the mode selector controls the CDMA 1x module so that the CDMA 1x module measures the strength of a signal transmitted from the CDMA 1x network (Park Col. 8 line 64 through Col. 9 line 23), and controls the UMTS module so that the UMTS module transmits measurement information measured by the CDMA 1x module to the UMTS network, wherein the WCDMA module converts the measurement information measured by the CDMA 1x module into an SMS message using the SMS module, and then transmits the SMS message to the UMTS network. (Park Fig. 9, Col. 8 line 60 through Col. 9 line 41 and Reynolds Col. 3 line 62 through Col. 4 line 7, Col. 4 line 35 through Col. 5 line 33)

Regarding claim 7, Park in view of Legg and Reynolds teaches the WCDMA module further converts a channel assignment request signal for performing communication with the CDMA 1x module into an SMS message using the SMS module and then transmits the SMS message to the UMTS network, under the control of the mode selector. (Reynolds Col. 5 line 31 through Col. 6 line 39 and Park Fig. 6B [Extended/General Handoff Direction Message])

Regarding claim 8, Park in view of Legg and Reynolds teaches the UMTS network device comprises:

a UTRAN (Park Col. 2 lines 61-67) for setting up a wireless channel to the dual-mode terminal (Park Fig. 1C [300]), communicating with the dual-mode terminal over the wireless channel (Park Fig. 6A [1]), and receives the first SMS message transmitted from the dual-mode terminal; (Reynolds Col. 3 line 62 through Col. 4 line 7, Col. 4 line 35 through Col. 5 line 33)

a core network (Park Fig. 1C [330] and Reynolds Fig. 3 [104 & 106]) including an SMS module for restoring the first SMS message that the UTRAN received, and converting information into an SMS message; (Reynolds Col. 3 lines 62 through Col. 6 line 39 and Park Col. 6 lines 46-54) and

a CDMA 1x gateway capable of interfacing with the CDMA 1x network, for transmitting restored data containing one of the measurement information and the channel assignment information to the CDMA 1x network and transmitting the channel assignments information to the core network, (Park Fig. 6B [MSC & Extended/General Handoff Direction Message])



wherein the core network converts the channel assignment information into an SMS message using the SMS module and transmits the SMS message to the dual-mode terminal via the UTRAN. (Park Fig. 6B [Extended/General Handoff Direction Message] & Reynolds Col. 3 line 62 through Col. 4 line 7, Col. 4 line 35 through Col. 5 line 33)

Regarding claim 9, Park in view of Legg and Reynolds teaches the WCDMA module restores the SMS message transmitted from the UMTS network device using the SMS module and controls the CDMA 1x module so that the CDMA 1x module can detect the channel assignment information from the SMS message and communicate over an assigned channel. (Park Fig. 6B [Extended/General Handoff Direction Message (Including System Information of Synch BS and Traffic Channel Information)])

Regarding claim 10, Park in view of Legg and Reynolds teaches the CDMA 1x network device comprises:

a plurality of base transceiver subsystems (BTSSs) for setting up a wireless channel to the dual-mode terminal and communicating with the dual-mode terminal over the wireless channel; (Park Fig. 1C [320])

a base station controller (BSC) for controlling the BTSSs; (Reynolds Fig. 1 [4])

a mobile switching center (MSC) connectable to a public switched telephone network (PSTN) interface (Reynolds Fig. 1 [2] and Col. 2 lines 63 through Col. 3 line 11) and the UMTS network and the CDMA 1x network, for assigning a channel to the dual-mode terminal and transmitting channel assignment information to the UMTS network;

(Park Fig. 6B [MSC & Extended/General Handoff Direction Message (Including System Information of Synch BS and Traffic Channel Information)] and Legg Fig. 4 [419]) and

a UMTS gateway for sending a channel assignment request to the MSC by detecting one of the measurement information and the channel assignment request signal transmitted from the UMTS network, and transmitting the channel assignment information received from the MSC to the UMTS network. (Park Fig. 6A & 6B)

Regarding claim 11, the limitations of claim 11 are rejected as being the same reasons set forth above in claim 8.

Regarding claim 12, the limitations of claim 12 are rejected as being the same reasons set forth above in claim 5.

Regarding claim 13, the limitations of claim 13 are rejected as being the same reasons set forth above in claim 1.

Regarding claims 14-15, the limitations of claims 14-15 are rejected as being the same reasons set forth above in claim 3.

Regarding claim 16, the limitations of claim 16 are rejected as being the same reasons set forth above in claim 11.

Regarding claim 17, the limitations of claim 17 are rejected as being the same reasons set forth above in claims 1, 2, 3 & 8.

Regarding claim 18, Park in view of Legg and Reynolds teaches a pilot transmitter located in the second mobile communication network device, for transmitting a dummy pilot to the first communication network,

wherein the dual-mode terminal measures the strength of the dummy pilot transmitted from the pilot transmitter and transmits measurement information to the first mobile communication network device. (Park Col. 3 line 63 through Col. 4 line 3, Legg Fig. 4 and Col. 6 lines 15-62 specifically lines 24-33 and 49-55)

Regarding claim 19, the limitations of claim 19 are rejected as being the same reasons set forth above in claim 13.

Regarding claim 20, the limitations of claim 20 are rejected as being the same reasons set forth above in claim 18.

Regarding claims 21-23, the limitations of claims 21-23 are rejected as being the same reasons set forth above in claims 1-6.

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW C. SAMS whose telephone number is (571)272-8099. The examiner can normally be reached on M-F 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on (571)272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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MCS  
3/5/2008

/George Eng/  
Supervisory Patent Examiner, Art Unit 2617